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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,485	09/27/2005	Didier Frachon	268846US6PCT	5342
22850	7590	05/15/2007		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER WHITTINGTON, KENNETH	
			ART UNIT	PAPER NUMBER
			2862	
			NOTIFICATION DATE	DELIVERY MODE
			05/15/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/530,485

Applicant(s)

FRACHON ET AL.

Examiner

Kenneth J. Whittington

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 18-33 is/are rejected.
- 7) ☒ Claim(s) 34 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/30/05</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

6

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- 18 (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- 24 (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- 30 (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- 36 (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the target being rotationally mobile around a shaft perpendicular to an axis of magnetization of the magnet as recited in claim 21, the magnet having the cavity formed therein and having a ferromagnetic piece bonded thereto as recited in claim 24 and the magnet being adhesively bonded to a T-shaped ferromagnetic piece as recited in claim 25 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of

the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required
6 corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 18-22, 24, 25, 31 and 32 are objected to because of the following informalities: each of these claims recites "the
12 magnet" which lacks antecedent basis because. The claims only provide a basis for "at least one magnet". Appropriate correction is required.

For purposes of examination only, the claims will be interpreted such that the magnet refers to the at least one magnet.

18

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

Art Unit: 2862

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 18, 19, 23, 24, 26, 27 and 31 are rejected under 35

6 U.S.C. 102(b) as being anticipated by Dilger et al. (US5670876),
hereinafter Dilger. Regarding claim 1, Dilger discloses:

a target made of a ferromagnetic material (See Dilger FIGS.
1-5, item 20);

at least one magnet, the target and the magnet defining
between one another an air gap (See FIGS. 1-5, items 32 and 34);

12 a magnetosensitive element detecting a variation of
induction caused in the air gap by displacement of the target
relative to the magnet (See FIGS. 1-5, item 36),

wherein the magnet is magnetized along a direction
substantially perpendicular to a front surface of the magnet
bounding one edge of the air gap, the magnet having a cavity
18 opening on the front surface of the magnet, the magnetosensitive
element being seated in the cavity, the target having a
geometric configuration such that the variation of induction as
a function of the position of the target corresponds to a
predefined function (See FIGS. 1-5, note magnetization of
magnet, structure and orientation of sensor in cavity between
24 magnet).

Regarding claim 19, Dilger discloses the target is translationally mobile along an axis perpendicular to an axis of magnetization of the magnet (See FIGS. 1-5, note displacement direction 24).

6 Regarding claim 23, Dilger discloses the plane of the displacement of the target takes place is included in a plane passing through the center of the magnetosensitive element (See FIGS. 1-7).

Regarding claim 24, Dilger discloses a ferromagnetic piece adhesively bonded to the back of the magnet (See FIGS. 1-5, item 42).

12 Regarding claim 26, Dilger discloses the target having a particular shape configured to deliver a linear induction as a function of the displacement of the target (See FIGS. 1-5, note direction and orientation and col. 5, lines 12-32).

Regarding claim 27, Dilger discloses the magnetosensitive element is placed in the cavity in a zone of minimal induction
18 (See FIGS. 6 and 7).

Regarding claim 31, Dilger discloses the target having a shape to generate a variation of thickness of the air gap that is function of position relative to the target (See FIGS. 1-7).

Claims 18, 20, 23-25, 31 and 32 are rejected under 35
U.S.C. 102(b) as being anticipated by Hattori et al.
(US4424705), hereinafter Hattori. Regarding claim 18, Hattori
discloses:

6 a target made of a ferromagnetic material (See Hattori FIG.
4, item 12);

at least one magnet, the target and the magnet defining
between one another an air gap (See FIG. 4, item 13);

a magnetosensitive element detecting a variation of
induction caused in the air gap by displacement of the target
relative to the magnet (See FIG. 4, item 17),

12 wherein the magnet is magnetized along a direction
substantially perpendicular to a front surface of the magnet
bounding one edge of the air gap, the magnet having a cavity
opening on the front surface of the magnet, the magnetosensitive
element being seated in the cavity, the target having a
geometric configuration such that the variation of induction as
18 a function of the position of the target corresponds to a
predefined function (See FIG. 4, note magnetization of magnet,
structure and orientation of sensor in cavity between magnet).

Regarding claim 20, Hattori discloses the target
translationally mobile along an axis parallel to an axis of
magnetization of the magnet (See FIG. 4).

Regarding claim 23, Hattori discloses the plane of the displacement of the target takes place is included in a plane passing through the center of the magnetosensitive element (See FIG. 4, note structure).

Regarding claim 24, Hattori discloses a ferromagnetic piece adhesively bonded to the back of the magnet (See FIG. 4, item 14).

Regarding claim 25, Hattori discloses the magnet adhesively bonded to a T-shaped ferromagnetic piece (See FIG. 4, items 14 and 17).

Regarding claim 31, Hattori discloses the target having a shape to generate a variation of thickness of the air gap that is function of position relative to the target (See FIG. 4 and disclosure related thereto).

Regarding claim 32, Hattori discloses the magnet and the magnetosensitive element are disposed opposite a ferromagnetic membrane configured to be deformed under effect of a force applied vertically to a membrane (See FIG. 4 and disclosure related thereto).

Claims 18, 21 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Carr et al. (US4745363), hereinafter Carr. Regarding claim 18, Carr discloses:

a target made of a ferromagnetic material (See Carr FIGS. 1-4, wheel with teeth 16, 18, 20);

at least one magnet, the target and the magnet defining between one another an air gap (See FIGS. 1-4, item 10);

6 a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the magnet (See FIGS. 1-4, item 14),

wherein the magnet is magnetized along a direction substantially perpendicular to a front surface of the magnet bounding one edge of the air gap, the magnet having a cavity opening on the front surface of the magnet, the magnetosensitive
12 element being seated in the cavity, the target having a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIGS. 1-4, note magnetization of magnet, structure and orientation of sensor in cavity between magnet).

18 Regarding claim 21, Carr discloses the target is rotationally mobile around a shaft perpendicular to an axis of magnetization of the magnet (See FIGS. 1-4).

Regarding claim 33, Carr discloses the recited analog position sensor of claim 21 (See above).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

6 (a) A patent may not be obtained though the invention is not identically
disclosed or described as set forth in section 102 of this title, if the
differences between the subject matter sought to be patented and the prior
art are such that the subject matter as a whole would have been obvious at
the time the invention was made to a person having ordinary skill in the
12 art to which said subject matter pertains. Patentability shall not be
negated by the manner in which the invention was made.

Claims 18, 21 and 28-30 are rejected under 35 U.S.C. 103(a)
as being unpatentable over Woyton (US3916326) in view of
Jansseune (US6043646). Regarding these claims, Woyton teaches:

a target made of a ferromagnetic material, the target
18 comprising three spiral teeth and having a measurable angular
travel of 360 degrees (See Woyton FIG. 1, item 14);

a magnetosensitive element detecting a variation of
induction caused in the air gap by displacement of the target
relative to the magnet (See FIGS. 1-4, item 14),

wherein the target has a geometric configuration such that
24 the variation of induction as a function of the position of the
target corresponds to a predefined function (See FIG. 1, note
structure and orientation of target and sensor).

However, Woyton does not teach the recited sensor/magnet arrangement. Jansseune teaches a sensor arrangement for detecting the passing of a ferromagnetic passing part comprising at least one magnet, the target and magnet defining an air gap, the magnet is magnetized in a direction perpendicular to a front surface of the magnet towards the air gap, the direction being perpendicular to the movement of the target, the magnet having a cavity with a magnetosensitive sensor seated therein (See Jansseune FIG. 1, note magnet, sensor and orientation in relation to moving part). It would have been obvious at the time the invention was made to incorporate the sensor arrangement of Jansseune into the apparatus of Carr. One having ordinary skill in the art would have been motivated to do so because such are equivalent sensors for measuring passing of a magnetic part and the sensor of Jansseune provides a sensor that is simply constructed and easy to produce (See Jansseune col. 1, lines 37-40).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carr in view of McDearmon et al. (US20040017190), hereinafter McDearmon. Regarding this claim, Carr discloses the magnet/sensor axis perpendicular to the axis of rotation of the wheel, but not parallel. McDearmon teaches a

rotary position sensor that is magnetically back biased wherein the magnet/sensor axis is either perpendicular or parallel to the rotational axis of the wheel (See McDearmon FIGS. 2 and 3, and paragraph 0022). It would have been obvious at the time the invention was made to use either oriented sensor arrangement
6 such that the magnet/sensor is axially oriented as taught by McDearmon. One having ordinary skill in the art would do this because each are equal orientations to measure the rotation of a magnetic wheel as shown in FIGS. 2 and 3 of McDearmon.

Allowable Subject Matter

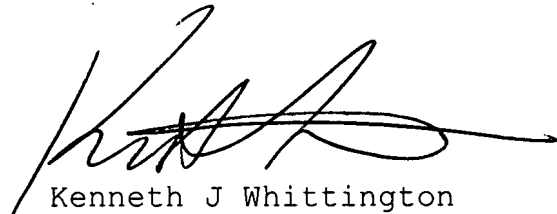
12 Claim 34 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not show or
18 teach the method of creating the position function as recited in the claim and in combination with the other features of the claim.

Conclusion

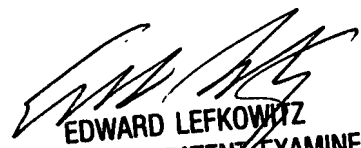
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth J. Whittington whose telephone number is (571) 272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Kenneth J Whittington
Examiner
Art Unit 2862

kjw



EDWARD LEFKOWITZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800